DOCUMENT RESUME

ED 443 868 TM 031 513

AUTHOR Xue, Yange; Meisels, Samuel J.; Bickel, Donna DiPrima; Nicholson, Julie; Atkins-Burnett, Sally

TITLE An Analysis of Parents' Attitudes towards Authentic Performance Assessment.

PUB DATE 2000-04-00

NOTE 44p.; Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April 24-28, 2000).

PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.

DESCRIPTORS Curriculum; Elementary Education; *Elementary School Students; Information Dissemination; Parent Attitudes; *Parents; *Performance Based Assessment; Preschool Education; Report Cards; *Student Evaluation

IDENTIFIERS *Work Sampling System (Meisels)

ABSTRACT

This study focused on parents' reactions to the implementation of a curriculum-embedded performance assessment for young children. It examines the Work Sampling System (WSS) (S. Meisels, J. Jablon, D. Marsden, M. Dichtelmiller, A. Dorfman, and D. Steele, 1994), a continuous progress performance assessment system that offers an alternative to norm-referenced group-administered achievement tests for preschool through grade 5. With the WSS, parents become involved in the assessment process. Data gathered from students in schools using the WSS and their parents were analyzed. Of the 350 surveys distributed to families, 246 were completed and returned (70%). Parents in this study held positive attitudes toward the WSS Summary Report and Portfolio and believed that these tools benefited their children. These results suggest that parents appreciate the more detailed information they receive from the WSS. Approximately two-thirds of the respondents preferred the WSS to conventional report cards. Other parents seemed to prefer the letter grades with which they were familiar. The more parents perceived that teachers enjoyed using the WSS, and the more they perceived that teachers were willing to help them understand the WSS, the more they liked the system. An appendix contains a discussion of variables used in the structural equation models. (Contains 2 figures, 9 tables, and 46 references.) (SLD)

Reproductions supplied by EDRS are the best that can be made
from the original document.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
✓ This document has been reproduced as
received from the person or organization
originating it.
☐ Minor changes have been made to
improve reproduction quality.
• Points of view or opinions stated in this
document do not necessarily represent
official OERI position or policy.

Y. Xue

1

ED 443 868

An Analysis of Parents' Attitudes Towards Authentic Performance Assessment

Yange Xue[a]

Samuel J. Meisels[a]

Donna DiPrima Bickel[b]

Julie Nicholson[a]

Sally Atkins-Burnett[a]

[a]University of Michigan

[b]University of Pittsburgh

Paper Presented at AERA 2000 Annual Meeting, New Orleans, LA

TM031513

BEST COPY AVAILABLE

An Analysis of Parents' Attitudes Towards Authentic Performance Assessment

In order to improve student achievement, it is now widely recognized by educational researchers, practitioners, and policymakers that students need to learn how to think critically and apply what they learn. Such goals are viewed as valuable for all children (e.g., Darling-Hammond, 1994; Resnick & Resnick, 1992, 1996; Wolf, Bixby, Glenn, & Gardner, 1991). There is also broad recognition that we cannot change our expectations about what we want students to know without also changing the standards by which student achievement is judged and the methods by which these accomplishments are assessed. Therefore, assessment and its redefinition have come to be placed at the forefront of the agenda of educational reform in the United States (Khattri & Sweet, 1996; Khattri, Reeve, & Kane, 1998; National Council on Education Standards and Testing, 1992; Resnick & Resnick, 1992, 1996). Assessment is viewed not simply as one of the elements that must change in order to transform teaching and learning, but as the driving force of such change. Standards-based, performance-based assessments become one of the cornerstones of educational reform, largely because of the belief that these assessments can bring about improvements in teaching and learning and, therefore, in student achievement (Darling-Hammond, 1994; Frederiksen & Collins, 1989; Khattri, Reeve, & Kane, 1998; Khattri & Sweet, 1996; Resnick & Resnick, 1992; Wiggins, 1989a, 1996).

Performance assessment refers to a variety of methods to assess student performance. These methods may have different labels: alternative assessment, authentic

assessment, or performance assessment (Khattri, & Sweet, 1996). Regardless of the term used, according to Mitchell (1995), performance assessments imply "...active student production of evidence of learning—not multiple-choice, which is essentially passive selection among preconstructed answers" (p. 2). They are alternative approaches to assessing achievement (Meisels, Liaw, Dorfman, & Nelson, 1995; Resnick & Resnick, 1992; Wiggins, 1989a).

Performance assessments vary in different contexts. In the early grades, they may focus on the process of learning, relying heavily on measurement that is based on observation and documentation of learners' growth over time in natural contexts (Darling-Hammond & Falk, 1996; Stiggins, 1987). In the upper grades, assessments may continue to include observations of student growth while they focus increasingly on the products of student learning, using a range of projects, performances, and exhibitions to evaluate student achievement according to articulated criteria that are important for actual performance in that field (Wiggins, 1989b).

In educational reform movements, educators, policymakers, and the public have begun to reach consensus that the schools must better prepare students for the demands of the 21st century. A major goal is to support education that will encourage all students to construct, integrate, and apply their knowledge and to think critically and creatively. Performance assessments hold promise for accomplishing such goals since they have been developed for the purpose of eliminating some of the negative consequences linked to traditional testing practices while at the same time creating such positive outcomes for students and educators as improving student learning and motivation, enhancing teachers'

instructional decision-making abilities and motivation (Darling-Hammond, 1994; Linn, 1993; Meisels, 1996; Meisels, Dorfman, & Steele, 1994; Taylor, 1994).

In order for performance assessment to supplement conventional methods of assessment, public support must be marshalled. Parents are potential supporters who are critical to the success of this new reform movement (Bridge, 1976; Fullan, 1982, 1991; Dodd, 1996; Shepard & Bliem, 1995) because individually they support their children's learning, and collectively they can affect the curriculum and assessment changes that are generated from research. As states and school districts have adopted innovations, parent reactions have been mixed (Khattri & Sweet, 1996; Konzal & Dodd, 1999; Shepard & Bliem, 1995). To ensure support for newer instructional strategies, schools should provide parents with a thorough understanding of these innovations and attempt to involve parents throughout the stages of adoption (Dodd, 1996). Research on parents' perspectives suggests that much of parental opposition to innovations is due to preconceptions, lack of information, or misinformation (Johnson, 1991, Konzal & Dodd, 1999). Without support from the parents, effective implementation of performance assessment will not occur (Khattri & Sweet, 1996). For example, Littleton, Colorado, had to revoke its reforms due to the opposition from the community. Parents were not well informed about the reforms and the enactment of reforms was too quick to be accepted by parents. In contrast, Vermont's reform has been supported by parents because it engaged in a large-scale informing process before beginning its statewide reform (Khattri & Sweet, 1996).

Parents tend to generate their beliefs about education based upon their own past experiences. When talking about schooling and assessment, parents generally reflect on

their own school experience of standardized testing (Robinson, 1996). Many parents do not understand how their children learn if they are not in classes which resemble their own schooling experiences, which included multiple choice examinations and standardized tests (Meyer & Rowan, 1978). Despite the fact that test scores, letter grades, and percentiles provide only narrow interpretations of student achievement, parents generally express more comfort with these types of indicators than with more complex and alternative measures. In one study, parents indicated that much of their discomfort with alternative assessment was based on the fact that they grew up with standardized testing and letter grades on report cards (Diffily, 1994). While many admitted that the letter grades did not tell them very much about their child's abilities or progress, they did find comfort in seeing A's on report cards and questioned the value of change.

In another study in which parents were asked about their views regarding changes to alternative assessment, most parents admitted having difficulty expressing their opinions because they lack general knowledge about assessment (Robinson, 1996). According to these parents, assigning grades is the responsibility of the teacher; however, parents expressed a desire to understand how assessment works.

Ensuring high standards for all learners is another concern of parents (Robinson, 1996). Parents tend to place their confidence in standardized test scores that measure their child's progress compared to other children of the same grade level. Performance assessments, however, move us beyond comparative interpretations and not only tell us what children know, they also tell us where the students need help to gain deeper understanding. When students are clear about the standards by which their work will be judged, and when learning experiences are designed to prepare students to demonstrate

their learning and not just recall facts, assessment becomes a means by which teachers, parents, and students can discuss the process of learning together (Konzal & Dodd, 1999; Robinson, 1996).

Performance assessment with parent involvement encourages discussion between teachers and parents about the nature of learning and the purpose of assessment. Such dialogue opens communication and helps reduce anxiety regarding academic achievement. When children are viewed as "critically involved in defining their own learning," parents and teachers are "relieved of some of the pressure within to produce results in children" (Lightfoot, 1978, p. 79). Instead, parents and teachers see that their role is to "provide the environment for learning and present the child with an array of intellectual tools and strategies" (Lightfoot, 1978, p. 79).

Research has suggested that parents expect the school to initiate contact when there is a change in policy or practice (Epstein, 1986; Robinson, 1996). Parents want to be informed and included in decisions regarding changes in the school curriculum and policies. Therefore, establishing consistent, open communication with parents is critical to home-school relationships and to success for students. Parents who learn the reasons, process, and consequence of alternative assessments prior to and during the implementation can provide the support necessary to make this innovation a success (Robinson, 1996).

Some previous studies have measured parents' opinions of performance assessments and standardized tests. The classic Gallup Poll showed a high percentage of respondents in favor of standardized national tests (Elam, Rose, & Gallup, 1992; 1994). The results in 1992 indicated that 71% of public school parents favored requiring the

public schools to use standardized test to measure the academic achievement of students. A similar result was obtained in 1994: 73% of the respondents thought standardized national exams were either very or quite important. However, in a study examining parents' opinions about standardized tests and performance assessments (Shepard & Bliem, 1995), most of the parents approved of both types of measures and actually gave stronger approval ratings to performance assessments. When parents had a chance to examine performance assessment problems, most expressed a preference for their use in the classroom. They believed that performance assessment problems make children think and are likely to give teachers better understandings about how children are performing in school. The findings suggest that parents' favorable ratings of standardized tests do not imply a preference for such measures over alternative approaches to evaluating their child's academic progress. Parents would be in favor of performance assessment if they are given enough information about it.

The present study focuses on parents' reactions to the implementation of a curriculum-embedded performance assessment with young children. Specifically, this study will examine the Work Sampling System (WWS; Meisels, Jablon, Marsden, Dichtelmiller, Dorfman, & Steele, 1994). Based on teachers' observations of students' activity and products within the context of their daily classroom experience, WSS is a curriculum-embedded, continuous progress performance assessment system that offers an alternative to norm-referenced, group-administered achievement tests in preschool through Grade 5.

WSS is an ongoing system that lets parents learn about what children can do and what teachers are teaching across the school year. It is more than a mere summary of

achievement; it is a record of learning and instruction as well. With this method of assessment, parents become involved in the assessment process. They can be helped to learn how to interpret their children's work. Although WSS has been shown to have reliability and predictive validity (Meisels et al., 1995), parents' attitudes regarding WSS have not been explored. As noted earlier, parents are essential to the success of any educational reform effort. Therefore, it is necessary to know how parents think and react to WSS. Using data from a questionnaire survey of parents' opinions regarding WSS, this paper examines parental satisfaction with WSS. The questions to be addressed in this paper are:

1. How did parents respond to the substitution of Portfolios and narrative Summary Reports for traditional letter grades?
2. How did parents react to WSS as a whole?
3. Which specific factors affected parents' overall reaction to WSS?

The answers to these questions will help to improve communication with parents about this approach to assessment, thus ensuring a more successful implementation of WSS in the future.

Method

This study is part of a larger investigation of the validity of the Work Sampling System and its influences on teacher practices and children's achievement (see Meisels, Bickel, Nicholson, Xue, & Atkins-Burnett, 1998). The Study took place from Fall 1996 to Spring 1997 in the Pittsburgh Public Schools. The larger study data included information from teachers, parents, school districts, and an individually administered standardized test of children achievement. Two groups of kindergarten—third grade

students participated in this study: 345 students in WSS schools and 431 students in contrast non-WSS schools. In this paper, only the data gathered from WSS students and their parents will be used, as only the families of those students were administered the parent survey regarding WSS.

Measures

Family Survey

A brief survey was distributed to families of children in WSS classrooms in Spring 1997. The parents were compensated with a gift certificate to a local supermarket for completing the survey. The purpose of the survey was to learn about family members' reactions to WSS and their opinions about its implementation. The questionnaire was divided into four parts: eight items in Part I concerned parents' opinions about the effectiveness of the Summary report as a way to monitor and report on children's academic accomplishments and progress. Four items in Part II concerned parents' opinions about the effectiveness of the Portfolio. Eleven items in Part III asked for parents' overall opinions about WSS. In these three sections, parents responded on a four-point scale ranging from strongly disagree (1) to strongly agree (4), with the exception that the last item in Part III had two choices (yes/no). Part IV included some personal background questions about race, income, and parental education. (See Table 1 for the questionnaire items.)

The purpose of WSS is to assess and document children's knowledge, skills, behavior, and accomplishments on multiple occasions across a wide variety of classroom domains achievement (Meisels, Dorfman, & Steele, 1994; Meisels et al., 1995). Therefore, it relies on extensive sampling of children's academic, personal, and social

progress over the school year. It can provide rich information about student strengths and weaknesses by helping teachers observe children systematically through well-stated standards and procedures (Meisels, 1993; Meisels et al., 1994). Teachers translate students' work into the data of assessment by systematically recording and evaluating it (Meisels, 1997).

WSS consists of three complementary elements: (1) Developmental Guidelines and Checklists, (2) collection of children's work in Portfolios, and (3) Summary Reports that summarize the information from Checklists and Portfolios (Meisels et al., 1994). These components are all classroom focused, instructionally relevant and curriculum-embedded.

The three elements of WSS focus on the classroom and reflect national, state, and local standards, as well as the teacher's objectives. Instead of providing a mere snapshot of narrow academic skills at a single point of time, WSS is a continuous recording and evaluating process with the aim of improving the teacher's instructional practices and students' learning. It assesses students' development and accomplishments in meaningful, curriculum-based activities. Since 1991, this system has been broadly adopted throughout the United States and abroad (Meisels, 1997).

The Woodcock Johnson Psychological Battery-Revised

Information about children's achievement was obtained from a nationally-normed, standardized assessment—the Woodcock Johnson Psychological Battery-Revised (WJ-R; Woodcock & Johnson, 1989). The WJ-R is an individually administered achievement test that was normed on a random stratified sample of 6,359 individuals with an age range of 24 months to 95 years. It was administered to the subjects in this study in the fall and

spring of the 1996-1997 school year. All examiners received training on administration of the WJ-R. They were blind to the objectives of this study. Nine subtests were administered to first—third grade children: letter word identification, passage comprehension, dictation, writing sample, applied problems, calculation, science, and social studies. Five subtests were administered to kindergarten children: letter word identification, dictation, applied problems, science and social studies. For the purposes of this paper, the standard scores of letter word identification and dictation in the fall were used in the analysis because these were the literacy scores that were available for both kindergarteners and older children. A mean score of letter word identification and dictation was computed as a measure of children's achievement.

Analyses

Parents' reactions to WSS. The family survey data were aggregated into four subscales. Family ratings for all items within a subscale were combined, and means and standard deviations were computed for each of the subscales. Three types of analyses were completed. First, Cronbach alphas and inter-subscale correlations were computed to test the internal reliability of each subscale. Second, descriptive statistics were computed for all four subscales and all items concerning parents' opinions of the WSS Summary Report and Portfolio. Third, two-step hierarchical regressions were used to examine which of several variables best predicted parents' overall satisfaction with WSS and parents' reactions to the Summary Report and Portfolio. All results are presented as standardized regression coefficients in order to highlight the correlations between the predictors and the outcomes, as well as the relative power of each predictor after controlling for other variables (see Cohen & Cohen, 1983).

Examining factors that affect parents' overall reactions to WSS through structural equation modeling. In order to examine the direct and indirect effect of parents' perceptions of teachers' willingness to use WSS and other factors on parents' overall satisfaction, two models were specified to represent these relationships using a structural equation approach (Bollen & Long, 1993; Hoyle, 1995; Joreskog, 1993; Maruyama, 1998). Structural equation modeling typically consists of a measurement model and a structural model. It allows researchers to use latent variables (i.e., unobserved variables) and incorporate multiple measures as indicators of latent variables. Thus, measurement errors can be taken into account in the model, whereas general path analysis cannot solve this problem (Schumaker & Lomax, 1996). The analysis in this study includes latent variables that were measured by the items in the parent questionnaire. The AMOS program (Arbuckle, 1997) was used for this analysis. A covariance matrix was analyzed using maximum likelihood method.

We hypothesized that seven variables (four exogenous and three endogenous) entered the model (see Appendix for a list of the variables). The exogenous variables include:

- parents' perceptions of the teacher's willingness to use the WSS (*F1_LIKE*),
- parents' attending WSS parent/teacher conferences (*F2_CONF*),
- school staff's availablity to answer parents' questions about WSS (*F3_STAFF*),
- student achievement (*F4_ACH*).

The endogenous variables are:

- parents' reactions to the Summary Report (*F5_SR*),

- parents' reactions to the Portfolio (*F6_PORT*),
- parents' overall reactions to WSS (*F7_OVER*).

After using listwise deletion to manage the missing data, the sample size for this analysis was 217. The model was identified by fixing appropriate regression weights. This made possible a unique solution is available for each parameter in the model.

For the purpose of evaluating the overall fit of the model, absolute fit indices and incremental fit indices are reported. The absolute fit indices, GFI (Goodness-of-Fit Index) and AGFI (Adjusted Goodness-of-Fit Index), indicate the relative amount of the observed variances and covariances that are accounted for by the implied model. The incremental fit indices, CFI (Comparative Fit Index) and NFI (Normed Fit Indexes), measure the proportion of improvement in fit by comparing the target model with a baseline model—the null model. Usually, .90 is the agreed-upon cutoff for overall fit indices (Bagozzi & Yi, 1988; Bollen & Long, 1993; Hoyle, 1995). Fit indices above .90 are viewed as acceptable.

Results

Parents' Reactions to WSS

Of the 350 surveys distributed to families, 246 were completed and returned. The return rate was 70%. The majority of the respondents (79%) were the students' mothers and a large percent of respondents (62%) were African-American. Over half of the respondents (59%) had completed at least some college, technical, vocational, or business school beyond high school. The majority (82%) of the students in the survey received

free or reduced lunch. About half of the families (48%) had more than one child in classrooms using WSS.

For the purpose of analysis, the family survey was aggregated into four subscales for the purpose of analyses. The items included in each subscale are shown in Table 1.

Insert Table 1 Here

All family survey items were answered using a four-point scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree. The mean of the items in a particular subscale was computed as the subscale score. The descriptive statistics for the subscales are shown in Table 2. Reliability coefficients (Cronbach alphas) were computed for each subscale and are reported in Table 2. Reliability coefficients for all four subscales are high, ranging from .87 to .92. Correlations between the four subscales are moderate to high, ranging from .44 to .67 (see Table 3).

Insert Tables 2 and 3 Here

Families were generally very positive about the WSS. The highest ratings from families were given for the Summary Report, which is the element of WSS with which parents are most familiar (see Table 2). This suggests that families rate the WSS Summary Report highly in helping them to understand their children's learning.

The response of parents to the Summary Report and Portfolio are very positive (see Tables 4 and 5). All the items reach agreement (a mean score of 3 or more). The highest percentage of agreement is 92% for the item "The Summary Report helps me understand my child's strengths." The lowest percentage of agreement is 77% for the item "The Summary Report helps me understand how my child's teacher is helping my child learn."

Insert Tables 4 and 5 Here

Most of the respondents indicated that the Summary Report was helpful to them as parents. A majority agreed or strongly agreed that it helped them to understand their children's strengths, areas in need of assistance, how well their children were meeting the teacher's expectations for achievement, and how well their children were doing. Parents overwhelmingly agreed or strongly agreed that the WSS Portfolio helped their children think about improving their work, take pride in their work, and understand the strengths and progress they were making.

Parents also give several other aspects of WSS high ratings (see Table 6). For example, 80% of the respondents report that they have a good understanding of the concept of WSS, and 79% of the respondents rate WSS highly in helping them understand more about how their children learn and about their children's school work. A high proportion (81%) of the families agree that they know more about how their child learns from this system than from a conventional report card. Most families perceive their children's teacher as willing to use WSS ($\underline{M}$ = 3.17) and as being available to

answer parents' questions about the system ($\underline{M}$ = 3.12), and 76% of the families agree that WSS helps their children to understand what they are learning.

Insert Table 6 Here

The majority of families (69%) report that they would like to continue receiving a Summary Report. When families were asked to rate whether they would prefer WSS to traditional report cards with letter grades, almost two-thirds of the respondents (62%) agreed.

Regression Analysis

Analyses were conducted to examine which of several variables contributed most to families' overall reactions to WSS. Eight variables were entered into a hierarchical regression model as possible predictors of families' overall reactions to WSS. In the first step, six variables were entered:

1) parents' ethnicity,
2) parents' education level,
3) parents' relationship to the child,
4) the number of children in the family that were in WSS classrooms for the 1996-1997 school year,
5) the number of years the family had received a Summary Report,
6) whether a family member had attended at least one parent/teacher conference where WSS was discussed during the 1996-1997 school year.

Attending parent/teacher conferences was the single most significant predictor of parents' overall reactions. Parents who had attended at least one parent/teacher conference during the school year where WSS was discussed had a better understanding of the system and rated it more favorably than families who never had the opportunity to discuss WSS with their child's teacher.

Next, two additional variables were entered into the model:

1) parents' ratings of staff availability to answer their questions about the WSS,

2) parents' ratings of how much their child's classroom teacher liked using WSS.

These two variables proved to be strong predictors in the regression model, while the effect of conference attendance was partialed out by these two predictors (see Table 7). Families gave higher ratings to WSS when they perceived that their child's teacher liked using the system and the school staff was helpful and available to answer their questions about WSS.

Insert Table 7 Here

Similar regression models were conducted to examine the possible predictors of families' reactions to the WSS Summary Report and Portfolio. Parents' perceptions of teachers' willingness to use WSS and staff availability to answer questions about WSS best predicted their satisfaction with the Summary Report and Portfolio (see Table 7). However, parents' attitudes towards the Summary Report were unstable over grade. The longer children of the family were in WSS classrooms, the less positive the family's

reaction to the Summary Report. The descriptives of parents' reaction to the Summary Report for each grade are shown in Table 8. Although parents' rating of the Summary Report tends to decrease as students get older, these differences are not stable and are very small. As shown in Table 8, kindergarten parents showed the most positive attitude to the Summary Report. Third grade parents' satisfaction was second after that of Kindergarten parents.

Insert Tables 8 Here

Structural Equation Model

To examine the direct and indirect effects of parents' perception of teachers' willingness to use WSS and other factors on parents' overall satisfaction with the WSS, a structural equation model was constructed to represent these relationships. Since the results of the regression analysis showed that the demographic variables were not significant predictors for parents' overall perceptions of the WSS when the effects of other predictors were controlled, they were not included in the model. From field interviews with the teachers in the large study, we learned that some teachers in WSS schools believe that parents of low-achieving students may be more favorably disposed towards WSS because they believe that WSS gives their children opportunity to demonstrate their unique characteristics. In contrast, parents of high-achievers may be less positive about this system because they think it deprives their children of opportunities to achieve high scores and is less likely to motivate their children.

Therefore, children's achievement was also included in the model. It was measured by the mean score of WJ-R letter word knowledge and dictation subtests in Fall 1996.

In the initial model (see Figure 1, Model A), two variables were specified to have direct effects on parents' overall reactions to WSS: parents' perception of teachers' interest in using WSS, and staff availability to answer their questions about WSS. Parents' attitude to the Summary Report and the Portfolio are also likely to mediate the effect of teachers' willingness to use the WSS on parents' overall reaction. Children's achievement has an indirect effect on parents' overall reaction, which is mediated by parents' opinions about the Summary Report and Portfolio.

Insert Figure 1 Here

The model was identified by fixing the appropriate regression weights and the errors. It is assumed that the four exogenous variables with single indicator are perfectly measured. The regression weights of these variables are fixed to 1. The error of each exogenous variable is fixed to zero. The measurement scale of *F6* is fixed by setting one of its regression weights to 1. Since the reliability of the Summary Report subscale is .91 (91% of the variance of *PSURSUMR* is caused by *F5_SR*), the path *F5→PSURSUMR* is fixed to .95, and *err9* is fixed to .09. This means 9% of the variance of *PSURSUMR* is unexplained. The latent variable *F7* with a single indicator *PSUROVER* is also fixed in the same way.

The standardized solutions of model A are shown in Figure 1. The χ^2 of 141.18 with 25 degrees of freedom (N=217, p<.000; χ^2/df = 5.65) indicates that the model does not fit the data well. Other fit indices are shown in Table 9, which demonstrate that this initial model is unsatisfactory. All the fit indices (GFI, AGFI, CFI, and NFI) are below the acceptable value of .90. The squared multiple correlation indicates that only 18% of the variance in *F6_PORT* is explained, leaving 82% unexplained by the model. This suggests that a revised form of the model might fit better.

Insert Table 9 Here

In the revised model, model B, a two-way causal relationship is added between the two variables *F5* and *F6* (see Figure 2). This model is non-recursive because of the reciprocal relationships between variables. It is identified due to the existence of instrument variables (Maruyama, 1998). Instruments in the model need to have a direct causal relationship with one of the two variables that have a bi-directional relationship, but not with the other. In this model, *F1* and *F3* are instruments for identifying paths to *F6*, because they have modestly significant relationships with *F5*, but no significant relationships with *F6*. The standardized solutions of this model are shown in Figure 2. Selected fit indices are displayed in Table 9.

Insert Figure 2 Here

After adding the two-way relations between *F5* and *F6*, the fit of the model was greatly improved. The χ^2 with 23 degrees of freedom decreased to 57.40 (N=217, $p<.000$, $\chi^2/df = 2.50$). GFI, AGFI, CFI, and NFI are all above .90. GFI is .95, which means 95% of the variance and covariance in the observed variables are accounted for by the implied model. CFI is .96. NFI is .94, which means that 94% of the total covariance among observed variables are explained by this model when using the null model as a baseline model. In model B, AGFI increased to .87. The percentage of variance in *F6* explained by the model increased to 60%. Over 70% of the variances in *F5* and *F7* are explained. It is obvious that model B is superior to model A.

In model B, most of the structural paths are significant, although the paths from *F2* to *F6*, from *F3* to *F6*, and from *F4* to *F6* are weak. The reciprocal relationships between parents' satisfaction with the Summary Report (*F5*) and parents' satisfaction with the Portfolio (*F6*) are significant (standardized, .58 from *F5* to *F6* and .34 from *F6* to *F5*). The model shows that teachers' availability for parents' questions about WSS and parents' perceptions of teachers' willingness to use WSS affected parents' reactions to the Summary Report, which in turn affected parents' overall opinions of WSS. The effect of parents' attitudes towards the Portfolio on parents' overall satisfaction with WSS is primarily mediated by parents' attitudes towards the Summary Report. Children's achievement had no significant relationships with parents' reactions to the Summary Report and Portfolio. This means that there is no significant difference in the attitudes towards the Summary Report and Portfolio between the parents of low achievers and high achievers. WSS is welcome not only by the parents of low achieving students but also by those of high achieving children.

Discussion and Conclusions

In this study, we investigated families' reactions to the Work Sampling System through a parent questionnaire. Given the relatively high return rate of this survey (70%) and the sample size (N = 246), the results have considerable generalizability to low-income, African American families using WSS.

Parents in this study hold positive attitudes towards the WSS Summary Report and Portfolio, and believe that these tools benefit their children. These results suggest that parents appreciate the more detailed information they receive from the WSS Summary Report and Portfolio about their children's performance and progress. Parents' ratings of some other aspects of WSS are also high. Most of them agreed or strongly agreed that WSS helped them know more about how their children learn and about their children's school work than traditional report cards. They indicated that they understood the concept of WSS and agreed that WSS helped their children improve their learning.

However, there is some variation of opinion among respondents concerning whether they prefer WSS to typical report cards and whether they wish to continue receiving a Summary Report. Approximately two-thirds of the parents prefer WSS to conventional report cards and want to continue using the Summary Report instead of a report card with letter grades; one-third does not. There are several possible explanations for this finding. One possibility is that because letter grades can provide an opportunity for them to compare their children's achievement with other children in the classroom, some parents still want conventional report cards. As shown in previous studies (Diffily, 1994; Shepard & Bliem, 1995), parents were raised on standardized tests and conventional report cards, and they feel comfortable with these methodologies. Still

another important reason may be that the society considers letter grades to be the most common indicators of students' accomplishment. Finally, the school district where this study took place used WSS only through third grade; some parents may have been concerned that their children would have difficulty making the transition to conventional letter grades in the upper elementary years.

WSS is a new type of assessment for young children. Family involvement is an important feature of this method. With the guidance of school staff, parents can see how the WSS Summary Report helps them know about their own child's work and progress in ways that typical report card with letter grades cannot do. However, WSS is different from parents' own test-taking experiences. It will take some time for parents to stop comparing their children to classmates or to their other children, using percentile scores or rankings. They need to be taught a new way of thinking about assessment. In Shepard and Bliem's (1995) study, they suggest a less radical change that would combine performance assessment with standardized tests. As revealed in this study, continued efforts are still needed in WSS schools to provide parents with information about the merits of WSS.

The results of hierarchical regressions show that parents' ratings of the Summary Report and Portfolio are best predicted by parents' perception of teachers' willingness to use WSS and school staff availability to answer their questions about WSS. The more they perceive that their children's teachers enjoy using WSS, and the more they perceive that school staff are available to help them understand WSS, the more positive their ratings are regarding WSS. (This will be discussed further with the results of the structural equation model.) However, parents' attitudes towards the Summary Report

were marginally negatively related to the number of years the family had received Summary Report. The longer children were in the WSS classrooms, the less positive the family's reaction to the Summary Report, although their reactions remained positive all the same. The reason for this might be that families that received Summary Reports for the first time are attracted by the advantages of the new system, as contrasted to traditional report cards. Hence, their reactions to the questionnaire would be more positive. As the families become accustomed to the System, their enthusiasm appears to diminish, although only marginally. Therefore, families of children who were in WSS classrooms longer were less enthusiastic about the Summary report. As demonstrated in this study, parents of kindergarteners gave WSS Summary Report the highest rating compared to parents of children in other grades. However, it should be noted that this trend is unstable across the grades. Third grade was next highest to the Kindergarten. And the means of parents' ratings of the Summary Report in all grades reached agreement (a mean score of 3 or more). These results suggest that, generally speaking, parents in each grade responded to the WSS Summary Report positively.

As indicated in the revised structural equation model, parents' perceptions of teachers' willingness to use WSS and school staff availability to answer their questions about WSS also have significant effects on parents' overall ratings of the WSS. This suggests that teachers' willingness to adopt a new form of assessment in the classroom strongly influences parents' reactions to the assessment. In contrast, parents' expectations also affect teachers' classroom assessment practice (Shepard & Bliem, 1995). The attitudes of teachers and parents to performance assessment seem to influence each other. However, there were not enough teachers to allow us to analyze the

relationship between the attitude of teachers and parents toward WSS. It would be of practical significance to study such a relationship in future investigations.

The results of the structural equation model also suggest that when school staff are available to answer parents' questions about WSS, parents are more likely to accept this new type of assessment. As indicated earlier, with the guidance of school staff, parents can see how WSS helps them learn about their own child's strengths and weaknesses, his/her work and progress, and how WSS can be more informative than typical report cards. Studies remind us that parents' opposition to performance assessment is largely due to lack of information (Johnson, 1991; Khattri & Sweet, 1996) and lack of communication with teacher and school (Konzal & Dodd, 1999). With support from the parents who are well-informed about WSS, effective implementation of WSS would more likely occur.

However, it was unexpected that attendance at parent/teacher conferences at least once would not significantly affect parents' opinions about WSS. This may be because the conference did not focus on WSS. Such results also suggest that consistent informal communications between parents and teachers whenever the parents have questions about WSS might be more effective than conference attendance. This is consistent with the finding of the positive effect of staff availability to answer parents' questions about WSS. The more parents know about WSS, the more they are satisfied with it.

We also found in this study that, contrary to the concerns of some teachers in WSS schools, children's achievement does not have a negative relationship with parents' acceptance of the new assessment system. Instead, as shown in the structural equation model, there is no significant difference between the attitude of high-achievers' parents

and that of low-achievers' parents towards WSS. Parents of both high-achievers and low-achievers reacted similarly to the WSS: They all believe that WSS would benefit their children.

The reciprocal relationships between parents' opinions of the Summary Report and the Portfolio in the revised model suggest that parents who thought the Summary Report was useful to them were also likely to think the Portfolio would be helpful to their children, and vice versa. Their views concerning the two elements of WSS—the Summary Report and Portfolio—are integrated. How parents rated the Summary Report and how they rated the Portfolio determined their overall satisfaction with WSS. The higher they rated the Summary Report and Portfolio, the more positive their overall reactions to WSS. Moreover, parents' ratings of the Portfolio were mediated primarily by their opinions of the Summary Report. Because Summary Reports are sent home three times per year, parents are most familiar with this element of WSS. Therefore, it is not surprising to find a strong relationship between parents' opinions of Summary Report and their overall reactions to WSS.

In sum, we found in this study that parents' responses to the WSS Summary Report and Portfolio were very positive; they appreciated the detailed information they receive from the WSS Summary Report and Portfolio about their children's performance and progress. The parents in this study believe that WSS as a whole benefits their children. The majority of them prefer WSS to conventional report cards and would like to continue receiving a WSS Summary Report. Parents' perceptions of teacher's willingness to use WSS, and staff availability to answer parents' questions about WSS strongly affect parents' attitudes towards the WSS Summary Report and Portfolio; their

effects on parents' overall satisfaction with WSS are mediated by parents' attitudes towards the two integrated elements of WSS—the Summary Report and the Portfolio. But parents' attitudes towards WSS are not affected by their children's achievement. In order to receive support from the parents to ensure effective implementation of WSS, WSS schools need to make an effort to keep parents informed about WSS, and consistent informal communications between teachers and parents appear to be highly effective.

Table 1.

Subscales for Family Questionnaire

Subscale	Items
I. Families' reactions to the WSS Summary Report (8 items)	**The Summary Report helps me understand:** My child's strengths. Where my child needs help. How well my child's achievement compares with expectations at his/her grade level. How well my child is meeting the teacher's expectations for learning. My child's progress. How my child's teacher is helping my child learn. How well my child is doing overall. The different areas of learning in my child's classroom.
II. Families' reactions to the WSS Portfolio (4 items)	**The Portfolio helps my child:** Think about improving his/her work. Take pride in his/her work. Understand the progress he/she is making in school. Understand his/her strengths.
III. Families' overall reactions to WSS (8 items)	Compared to typical report card with letter grades, I like this system better. The WSS helps me know more about my child's school work than report cards. I know more about how my child learns from this system than from report cards. I think the WSS helps my child to understand what he/she is learning. My child likes using this system.

Subscales for Family Questionnaire (Continued)

Subscale	Items
	I would recommend the WSS to other schools and parents.
	I feel that I understand what the WSS is all about.
	If given the choice, I want to continue receiving the SR instead of a report card with letter grades.
IV. Families' thinking about WSS in relation to Report Cards (5 items)	Compared to typical report card with letter grades, I like this system better.
	The WSS helps me know more about my child's school work than report cards.
	I know more about how my child learns from this system than from report cards.
	I would recommend the WSS to other schools and parents.
	If given the choice, I want to continue receiving the SR instead of a report card with letter grades.

Table 2.

Descriptives and Reliabilities for Parent Survey Subscale

Subscale	M	SD	N	N of Items	Reliability (α)
Summary report	3.17	.61	246	8	.91
Portfolio	3.12	.66	245	4	.87
Report card	2.92	.80	246	5	.92
Overall reaction	2.92	.80	246	8	.91

Table 3.
Correlations between Family Survey Subscales

	Families' reactions to WSS Summary Report	Families' reactions to WSS Portfolio
Families' reactions to WSS Portfolio	.67	--
Families' overall reaction to WSS	.66	.53
Families' reactions to WSS in relation to report cards	.59	.44

$p < .001$.

Table 4.
Descriptives for Items Measuring Families' Reactions to WSS Summary Report

Item	M	SD	N	% of agreement
The Summary Report helps me understand:				
My child's strengths	3.24	.68	246	92
Where my child needs help	3.18	.76	246	87
How well my child's achievement compares with grade expectations	3.10	.80	246	82
How well my child is meeting the teacher's expectations for learning	3.13	.74	245	85
My child's progress	3.28	.71	243	90
How the teacher is helping my child learn	3.06	.88	244	77
How well my child is doing overall	3.14	.83	243	86
The different areas of learning in my child's classroom	3.23	.76	245	88

Table 5.
Descriptives for Items Measuring Families' Reactions to WSS Portfolio

Item	M	SD	N	% of agreement
The Portfolio helps my child:				
Think about improving his/her work	3.02	.77	243	79
Take pride in his/her work	3.31	.75	245	89
Understand the progress s/he is making in school	3.09	.80	245	82
Understand his/her strengths	3.06	.78	245	80

Table 6.
Descriptives for Items Measuring Families' Overall Reactions to WSS

Item	M	SD	N	% of agreement
Feel I understand what WSS is all about	3.00	.80	242	80
Know more about child's school work than report card	3.05	.88	242	79
Know more about how child learns than from report card	3.07	.88	245	81
Staff available to answer questions	3.12	.74	245	86
WSS helps child to understand	2.95	.79	244	76
Teacher likes using WSS	3.17	.69	235	89
Child likes using WSS	2.82	.76	238	73
Recommend WSS to others	2.89	.92	239	70
Prefer WSS to report card	2.69	.97	243	62
Want to continue receiving Summary Report	2.90	.99	244	69

Table 7.

Best Predictors of Families' Reactions to the WSS Summary Report and Portfolio and Families' Overall reactions to WSS

Predictors	Reactions to the Summary Report (Regression Coefficients)		Reactions to the Portfolio (Regression Coefficients)		Overall Reactions to WSS (Regression Coefficients)	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Parents' ethnicity (minority)	.025	-.007	.048	.031	.050	.017
Parents' relationship to child (mother)	.038	.080	.004	.043	-.044	.002
Parents' level of education	-.086	-.019	-.112	-.064	-.040	.033
Number of children in WSS classrooms	-.137*	-.056	-.102	-.059	-.127	-.044
Number of years family had received Summary Report	-.113	-.125*	-.056	-.055	-.069	-.081
Families attending at least one parent/teacher conference	.076	-.037	.132*	.052	.125*	.005
Parents' perceptions of staff availability to answer questions about WSS		.308***		.296***		.342***
Parents' perceptions of whether classroom teacher likes WSS		.416***		.221**		.431***
R^2	.052	.405***	.044	.224***	.049	.449***
R^2 change	--	.353***	--	.180***	--	.400***

*p<.05, **p<.01, ***p<.000

Table 8.
Parents' Ratings of WSS Summary Report for Each Grade

Grade	M	SD	N
Kindergarten	3.33	.58	69
First Grade	3.14	.58	65
Second Grade	3.03	.67	61
Third Grade	3.17	.57	51

Table 9.
Fit Indices for Model A and Model B

	χ^2	df	χ^2/df	GFI	AGFI	CFI	NFI
Model A	141.18	25	5.65	.89	.77	.87	.85
Model B	57.40	23	2.50	.95	.87	.96	.94

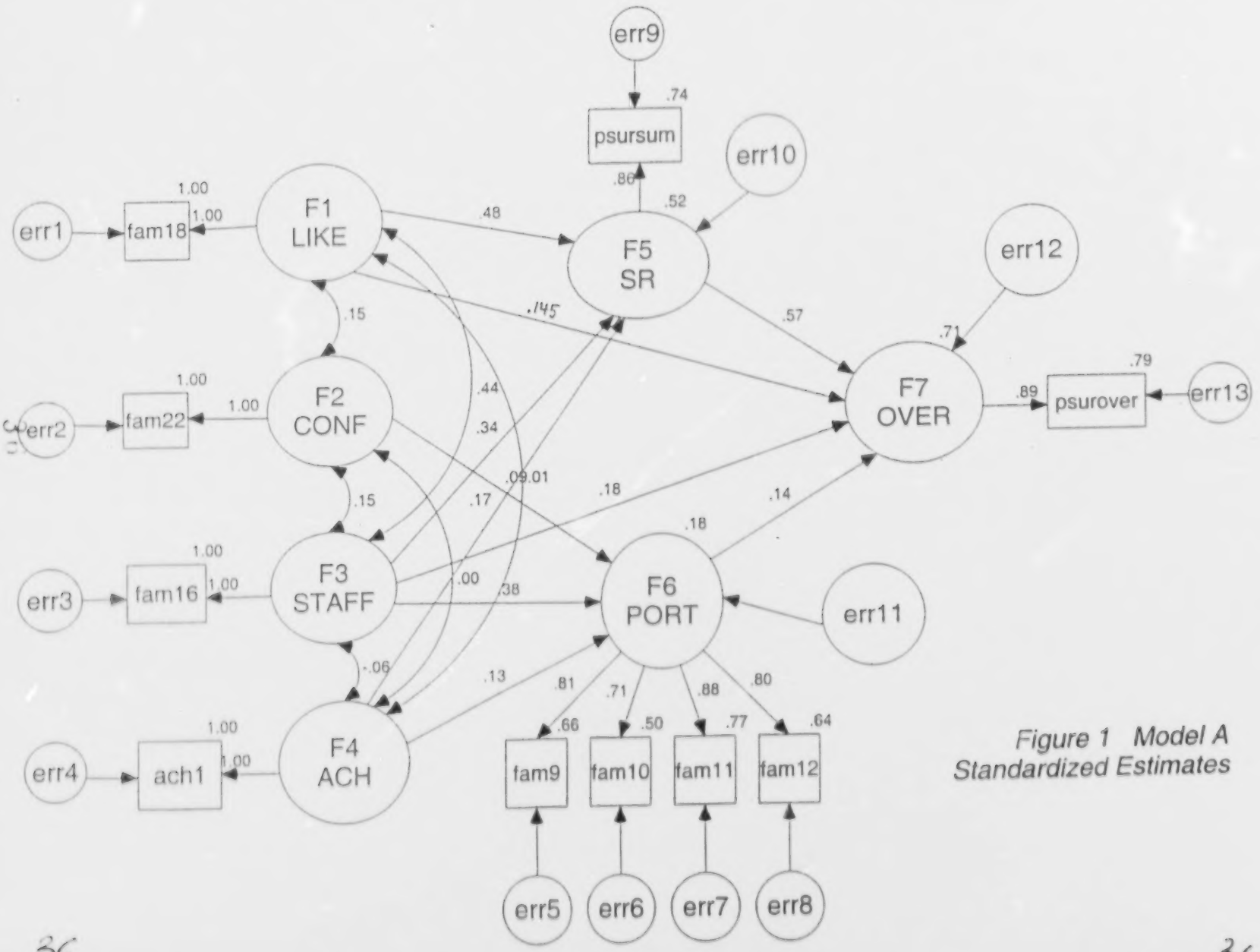

Figure 1 Model A
Standardized Estimates

36

36 A

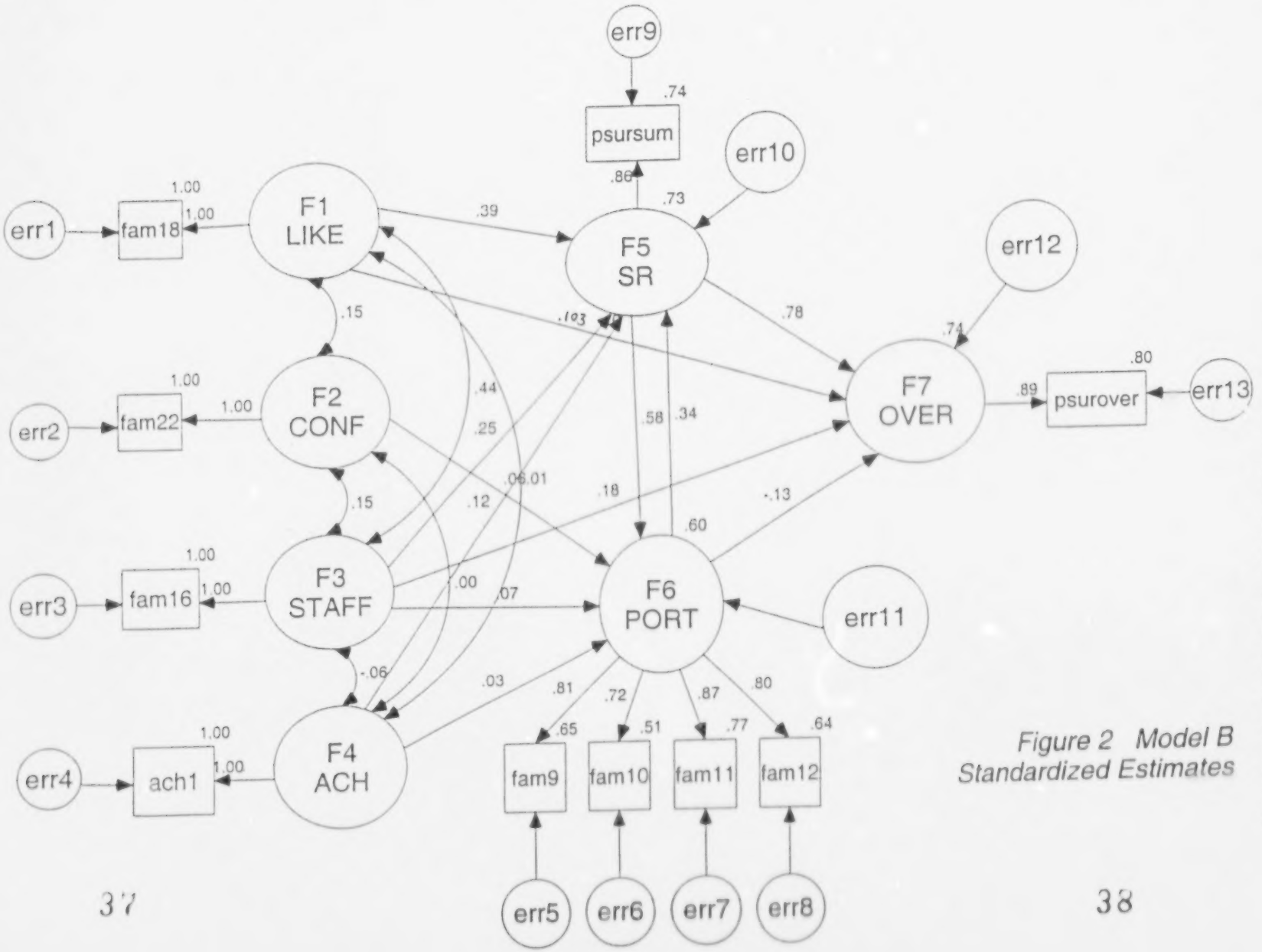

Figure 2 Model B
Standardized Estimates

References

Arbuckle, J. L. (1997). AMOS users' guide: Version 3.6. Chicago: SPSS.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. Journal of the Academy of Marketing Sciences, 16, 74-94.

Bollen, K., & Long, J. S. (1993). Testing structural equation models. Newbury Park, CA: Sage.

Bridge, G. R. (1976). Parent participation in school innovations. Teachers College Record, 77, 366-84.

Cohen, J., & Cohen, P. (1983). Applied multiple regression/correlation analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbaum.

Darling-Hammond, L. (1994). Performance-based assessment and educational equity. Harvard Educational Review, 64 (1), 5-30.

Darling-Hammond, L., & Falk, B. (1996). Supporting teaching and learning for all students: Policies for authentic assessment systems. In A. L. Goodwin (Ed.), Assessment for equity and inclusion: Embracing all our children. NY: Routledge.

Diffily, D. (1994). What parents think about alternative assessment and narrative reporting: One school's finding. ERIC, ED381230.

Dodd, A. W. (1996). Involving parents, avoiding gridlock. Educational Leadership, 53, 44-46.

Elam, S.M., Rose, L.C., & Gallup, A.M. (1992) The 24th annual Gallup-Phi Delta Kappan Poll of the public's attitude toward the public schools. Phi Delta Kappan, 74, 41-53.

Elam, S.M., Rose, L.C., & Gallup, A.M. (1994) The 26th annual Gallup-Phi Delta Kappan Poll of the public's attitude toward the public schools. Phi Delta Kappan, 76, 41-56.

Epstein, J. (1986). Parents' reactions to teacher practices of parental involvement. Elementary School Journal, 86, 277-94.

Frederiksen, J. R., & Collins, A. (1989). A system approach to educational testing. Educational Researcher, 18 (9), 27-32.

Fullan, M. (1982). The meaning of educational change. New York: Teachers College Press.

Fullan, M (1991). The new meaning of educational change. New York: Teachers College.

Hoyle, R. H. (1995). Structural equation modeling: Concepts, issues, and applications. Thousand Oaks: Sage.

Joreskog, K. G. (1993). Testing structural equation models. In K. A. Bollen & J. S. Long (Eds.), Testing structural equation models (pp. 294-316). Newbury Park, CA: Sage.

Johnson, D. (1991). Parents, students and teachers: A three-way relationship. International Journal of Educational Research, 15, 171-81.

Khattri, N., Reeve, A. L., & Kane, M. B. (1998). Principles and practices of performance assessment. NJ: Lawrence Erlbaum.

Khattri, N., & Sweet, D. (1996). Assessment reform: Promises and challenges. In M. Kane & R. Mitchell (Eds.) Implementing performance assessment: Promises, problems, and challenges (pp.1-21). NJ: Lawrence Erlbaum.

Konzal, J. L., & Dodd, A. W. (1999). Implementing higher standards and alternative assessment and grading policies in high schools: What do educators need to know about what parents think? Paper presented at the AERA annual conference. Montreal, Canada.

Lightfoot, S. L. (1978). Worlds apart: Relationships between families and schools. New York: Basic Books.

Linn, R. (1993). Educational assessment: Expanded expectations and challenges. Educational Evaluation and Policy Analysis, 15 (1), 1-16.

Maruyama, G. M. (1998). Basics of structural equation modeling. Thousand Oaks, CA: Sage.

Meisels, S. J. (1993). Remaking classroom assessment with the Work Sampling System. Young Children, 48 (5), 34-40.

Meisels, S. J. (1997). Using Work Sampling in authentic assessments. Educational Leadership, 54 (4), 60-65.

Meisels, S. J., Bickel, D. P., Nicholson, J., Xue, Y., & Atkins-Burnett, S. (1998). Pittsburgh Work Sampling Achievement Validation Study. Ann Arbor, MI: The University of Michigan.

Meisels, S. J., Dorfman, A., & Steele, D. (1994). Equity and excellence in group-administered and performance-based assessments. In M. Nettles (Ed.), Equity in educational assessment and testing (pp. 195-211). Boston: Kluwer Academic.

Meisels, S. J., Jablon, J. R., Marsden, D. B., Dichtelmiller, M. L., Dorfman, A. B. & Steele, D. M. (1994). The Work Sampling System: An Overview. Ann Arbor, MI: Rebus Inc.

Meisels, S.J., Liaw, F., Dorfman, A., & Nelson, R. (1995). The Work Sampling System: Reliability and validity of a performance assessment for young children. Early Childhood Research Quarterly, 10, 277-296.

Meyer, J., & Rowan, B. (1978). The structure of educational organizations. In Meyer (Ed.) Environments and organizations (pp. 78-109). San Francisco, CA: Jossey-Bass.

Mitchell, R. (1995). The promise of performance assessment: How to use backlash constructively. Paper presented at the AERA annual conference. San Francisco, CA.

National Council on Education Standards and Testing (1992). Raising standards for American education: A report to Congress, the Secretary of Education, the National Goals Panel, and the American people. Washington, DC: NCEST.

Resnick, L. B., & Resnick, D. P. (1992). Assessing the thinking curriculum: New tools for educational reform. In B. R. Grifford & M. C. O'Connor (Eds.) Changing assessment: alternative views of aptitude, achievement, and instruction (pp. 37-75). Boston: Klewer.

Resnick, D. P., & Resnick, L. B. (1996). Performance assessment and the multiple functions of educational measurement. In M. Kane & R. Mitchell (Eds.) Implementing performance assessment: Promises, problems, and challenges (pp. 23-38). NJ: Lawrence Erlbaum.

Robinson, J. (1996). Parents as allies for alternative assessment. In A. L. Goodwin (Ed.), Assessment for Equity and inclusion: Embracing all our children (pp. 297-303). NY: Routledge.

Shepard, L. A., & Bliem, C. L.(1995) Parents' thinking about standardized tests and performance assessments. Educational Researcher, 24, 25-32.

Schumaker, R.E., & Lomax, R. B. (1996). A beginner's guide to structural equation modeling. NJ: Erlbaum.

Stiggins, R. (1987). Design and development of performance assessments. Educational Measurement: Issues and Practice, 6, 33-42.

Taylor, C. (1994). Assessment for measurement or standards: The peril and promise of large-scale assessment reform. American Educational Research Journal, 31, 231-262.

Wiggins, G. (1989a). Teaching to the (authentic) test. Educational Leadership, 46, 41-47.

Wiggins, G. (1989b). A true test: Toward more authentic and equitable assessment. Phi Delta Kappan, 10, 703-713.

Wiggins, G. (1996). Practicing what we preach in authentic assessments. Educational leadership, 54(4), 18-25.

Wolf, D. P., Bixby, J., Glenn, J., & Gardner, H. (1991). To use their mind well: Investigating new forms of student assessment. In G. Grant (Ed.), Review of research in education, 17 (pp. 31-74). Washington, DC: American Educational Research Association.

Woodcock, R. W., & Johnson, M. B. (1989). Woodcok-Johnson psychoeducational battery--Revised. Allen, TX: DLM Teaching Resources.

Appendix
Variables Used in the Structural Equation Models

A. Exogenous Variables:

F1_LIKE—Parents' perceptions of teacher's willingness to use the WSS.

F2_CONF—Parents' attendance to WSS parent/teacher conferences.

F3_STAFF—School staff available to answer parents' questions about WSS.

F4_ACH—Student achievement, standardized score of letter word identification.

All these latent exogenous variables have a single indicator.

B. Endogenous Variables:

F5_SR—Parents' reactions to the Summary Report. This latent variable is measured by the subscale of parents' reactions to the WSS Summary Report (*PSURSUMR*; 8 items, Cronbach alpha = .91).

F6_PORT—Parents' reactions to the Portfolio. This latent variable has four indicators, which are four items in the questionnaire asking about parents' opinions to the Portfolio:

The Portfolio helps my child:

Think about improving his/her work.

Take pride in his/her work.

Understand the progress he/she is making in school.

Understand his/her strengths.

F7_OVER—Parents' overall reactions to WSS. This latent variable is measured by the subscale of parents' overall reactions to WSS (*PSUROVER*; 8 items, Cronbach alpha = .91).